

SEQUENCE LISTING

<110> CHUGAI SEIYAKU KABUSHIKI KAISHA

<120> Anti-PCI neutralizing antibodies

<130> C1-A0226P

<150> JP 2003-011529

<151> 2003-01-20

<160> 60

<170> PatentIn version 3.1

<210> 1

<211> 17

<212> DNA

<213> Artificial

<220>

<223> Artificially synthesized sequence

<400> 1

acgaattcca ccatgcagct cttccctc

17

<210> 2

<211> 18

<212> DNA

<213> Artificial

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<400> 2

ctggatcctc agggcggtt cactttgc

18

<210> 3

<211> 16

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<223> Artificially synthesized sequence

<400> 3

ttggatccgg ggttcacttt gccaaag

16

<210> 4

<211> 1237

<212> DNA

<213> Artificial

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<223> Artificially synthesized sequence encoding human PCI

<220>

<221> CDS

<222> (11)..(1228)

<400> 4

gaattccacc atg cag ctc ttc ctc ctc ttg tgc ctg gtg ctt ctc agc 49

Met Gln Leu Phe Leu Leu Leu Cys Leu Val Leu Leu Ser

1

5

10

cct cag ggg gcc tcc ctt cac cgc cac cac ccc cgg gag atg aag aag 97
Pro Gln Gly Ala Ser Leu His Arg His His Pro Arg Glu Met Lys Lys

15

20

25

aga gtc gag gac ctc cat gta ggt gcc acg gtg gcc ccc agc agc aga 145
Arg Val Glu Asp Leu His Val Gly Ala Thr Val Ala Pro Ser Ser Arg

30

35

40

45

agg gac ttt acc ttc gac ctc tac agg gtc ttg gct tcc gct gcc ccc 193
 Arg Asp Phe Thr Phe Asp Leu Tyr Arg Val Leu Ala Ser Ala Ala Pro
 50 55 60

agc cag aat atc ttc ttc tcc cct gtg agc atc tcc atg agc ctg gcc 241
 Ser Gln Asn Ile Phe Phe Ser Pro Val Ser Ile Ser Met Ser Leu Ala
 65 70 75

atg ctc tcc ctg ggg gct ggg tcc agc aca aag atg cag atc ctg gag 289
 Met Leu Ser Leu Gly Ala Gly Ser Ser Thr Lys Met Gln Ile Leu Glu
 80 85 90

ggc ctg ggc ctc aac ctc cag aaa agc tca gag gag gag ctg cac aga 337
 Gly Leu Gly Leu Asn Leu Gln Lys Ser Ser Glu Glu Glu Leu His Arg
 95 100 105

ggc ttt cag cag ctc ctt cag gaa ctc aac cag ccc aga gat ggc ttc 385
 Gly Phe Gln Gln Leu Leu Gln Glu Leu Asn Gln Pro Arg Asp Gly Phe
 110 115 120 125

cag ctg agc ctc ggc aat gcc ctt ttc acc gac ctg gtg gta gac ctg 433
 Gln Leu Ser Leu Gly Asn Ala Leu Phe Thr Asp Leu Val Val Asp Leu
 130 135 140

cag gac acc ttc gta agt gcc atg aag acg ctg tac ctg gca gac act 481
 Gln Asp Thr Phe Val Ser Ala Met Lys Thr Leu Tyr Leu Ala Asp Thr
 145 150 155

ttc ccc acc aac ttt agg gac tct gca ggg gcc atg aag cag atc aat 529
 Phe Pro Thr Asn Phe Arg Asp Ser Ala Gly Ala Met Lys Gln Ile Asn
 160 165 170

gat tat gtg gca aag caa acg aag ggc aag att gtg gac ttg ctt aag 577
 Asp Tyr Val Ala Lys Gln Thr Lys Gly Lys Ile Val Asp Leu Leu Lys
 175 180 185

aac ctc gat agc aat gcg gtc gtg atc atg gtg aat tac atc ttc ttt	625		
Asn Leu Asp Ser Asn Ala Val Val Ile Met Val Asn Tyr Ile Phe Phe			
190	195	200	205
aaa gct aag tgg gag aca agc ttc aac cac aaa ggc acc caa gag caa	673		
Lys Ala Lys Trp Glu Thr Ser Phe Asn His Lys Gly Thr Gln Glu Gln			
210	215	220	
gac ttc tac gtg acc tcg gag act gtg gtg cgg gta ccc atg atg agc	721		
Asp Phe Tyr Val Thr Ser Glu Thr Val Val Arg Val Pro Met Met Ser			
225	230	235	
cgc gag gat cag tat cac tac ctc ctg gac cgg aac ctc tcc tgc agg	769		
Arg Glu Asp Gln Tyr His Tyr Leu Leu Asp Arg Asn Leu Ser Cys Arg			
240	245	250	
gtg gtg ggg gtc ccc tac caa ggc aat gcc acg gct ttg ttc att ctc	817		
Val Val Gly Val Pro Tyr Gln Gly Asn Ala Thr Ala Leu Phe Ile Leu			
255	260	265	
ccc agt gag gga aag atg cag cag gtg gag aat gga ctg agt gag aaa	865		
Pro Ser Glu Gly Lys Met Gln Gln Val Glu Asn Gly Leu Ser Glu Lys			
270	275	280	285
acg ctg agg aag tgg ctt aag atg ttc aaa aag agg cag ctc gag ctt	913		
Thr Leu Arg Lys Trp Leu Lys Met Phe Lys Lys Arg Gln Leu Glu Leu			
290	295	300	
tac ctt ccc aaa ttc tcc att gag ggc tcc tat cag ctg gag aaa gtc	961		
Tyr Leu Pro Lys Phe Ser Ile Glu Gly Ser Tyr Gln Leu Glu Lys Val			
305	310	315	
ctc ccc agt ctg ggg atc agt aac gtc ttc acc tcc cat gct gat ctg	1009		
Leu Pro Ser Leu Gly Ile Ser Asn Val Phe Thr Ser His Ala Asp Leu			
320	325	330	

tcc ggc atc agc aac cac tca aat atc cag gtg tct gag atg gtg cac 1057
 Ser Gly Ile Ser Asn His Ser Asn Ile Gln Val Ser Glu Met Val His
 335 340 345

aaa gct gtg gtg gag gtg gac gag tcg gga acc aga gca gcg gca gcc 1105
 Lys Ala Val Val Glu Val Asp Glu Ser Gly Thr Arg Ala Ala Ala
 350 355 360 365

acg ggg aca ata ttc act ttc agg tcg gcc cgc ctg aac tct cag agg 1153
 Thr Gly Thr Ile Phe Thr Phe Arg Ser Ala Arg Leu Asn Ser Gln Arg
 370 375 380

cta gtg ttc aac agg ccc ttt ctg atg ttc att gtg gat aac aac atc 1201
 Leu Val Phe Asn Arg Pro Phe Leu Met Phe Ile Val Asp Asn Asn Ile
 385 390 395

ctc ttc ctt ggc aaa gtg aac cgc ccc tgaggatcc 1237
 Leu Phe Leu Gly Lys Val Asn Arg Pro
 400 405

<210> 5
 <211> 406
 <212> PRT
 <213> Artificial

<220>
 <223> Human PCI

<220>
 <221> sig_peptide
 <222> (1)..(19)

<400> 5
 Met Gln Leu Phe Leu Leu Leu Cys Leu Val Leu Leu Ser Pro Gln Gly

1

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Ala Ser Leu His Arg His His Pro Arg Glu Met Lys Lys Arg Val Glu
20 25 30

Asp Leu His Val Gly Ala Thr Val Ala Pro Ser Ser Arg Arg Asp Phe
35 40 45

Thr Phe Asp Leu Tyr Arg Val Leu Ala Ser Ala Ala Pro Ser Gln Asn
50 55 60

Ile Phe Phe Ser Pro Val Ser Ile Ser Met Ser Leu Ala Met Leu Ser
65 70 75 80

Leu Gly Ala Gly Ser Ser Thr Lys Met Gln Ile Leu Glu Gly Leu Gly
85 90 95

Leu Asn Leu Gln Lys Ser Ser Glu Glu Glu Leu His Arg Gly Phe Gln
100 105 110

Gln Leu Leu Gln Glu Leu Asn Gln Pro Arg Asp Gly Phe Gln Leu Ser
115 120 125

Leu Gly Asn Ala Leu Phe Thr Asp Leu Val Val Asp Leu Gln Asp Thr
130 135 140

Phe Val Ser Ala Met Lys Thr Leu Tyr Leu Ala Asp Thr Phe Pro Thr
145 150 155 160

Asn Phe Arg Asp Ser Ala Gly Ala Met Lys Gln Ile Asn Asp Tyr Val
165 170 175

Ala Lys Gln Thr Lys Gly Lys Ile Val Asp Leu Leu Lys Asn Leu Asp
180 185 190

Ser Asn Ala Val Val Ile Met Val Asn Tyr Ile Phe Phe Lys Ala Lys

195 200 205

Trp Glu Thr Ser Phe Asn His Lys Gly Thr Gln Glu Gln Asp Phe Tyr
210 215 220

Val Thr Ser Glu Thr Val Val Arg Val Pro Met Met Ser Arg Glu Asp
225 230 235 240

Gln Tyr His Tyr Leu Leu Asp Arg Asn Leu Ser Cys Arg Val Val Gly
245 250 255

Val Pro Tyr Gln Gly Asn Ala Thr Ala Leu Phe Ile Leu Pro Ser Glu
260 265 270

Gly Lys Met Gln Gln Val Glu Asn Gly Leu Ser Glu Lys Thr Leu Arg
275 280 285

Lys Trp Leu Lys Met Phe Lys Arg Gln Leu Glu Leu Tyr Leu Pro
290 295 300

Lys Phe Ser Ile Glu Gly Ser Tyr Gln Leu Glu Lys Val Leu Pro Ser
305 310 315 320

Leu Gly Ile Ser Asn Val Phe Thr Ser His Ala Asp Leu Ser Gly Ile
325 330 335

Ser Asn His Ser Asn Ile Gln Val Ser Glu Met Val His Lys Ala Val
340 345 350

Val Glu Val Asp Glu Ser Gly Thr Arg Ala Ala Ala Thr Gly Thr
355 360 365

Ile Phe Thr Phe Arg Ser Ala Arg Leu Asn Ser Gln Arg Leu Val Phe
370 375 380

Asn Arg Pro Phe Leu Met Phe Ile Val Asp Asn Asn Ile Leu Phe Leu

385

390

395

400

Gly Lys Val Asn Arg Pro

405

<210> 6

<211> 1261

<212> DNA

<213> Artificial

<220>

<223> Artificially synthesized DNA encoding human PCI with Flag-tag

<220>

<221> CDS

<222> (11)..(1258)

<400> 6

 gaattccacc atg cag ctc ttc ctc ctc ttg tgc ctg gtg ctt ctc agc 49
 Met Gln Leu Phe Leu Leu Leu Cys Leu Val Leu Leu Ser
 1 5 10

 cct cag ggg gcc tcc ctt cac cgc cac cac ccc cgg gag atg aag aag 97
 Pro Gln Gly Ala Ser Leu His Arg His His Pro Arg Glu Met Lys Lys
 15 20 25

 aga gtc gag gac ctc cat gta ggt gcc acg gtg gcc ccc agc agc aga 145
 Arg Val Glu Asp Leu His Val Gly Ala Thr Val Ala Pro Ser Ser Arg
 30 35 40 45

 agg gac ttt acc ttc gac ctc tac agg gtc ttg gct tcc gct gcc ccc 193
 Arg Asp Phe Thr Phe Asp Leu Tyr Arg Val Leu Ala Ser Ala Ala Pro
 50 55 60

agc cag aat atc ttc ttc tcc cct gtg agc atc tcc atg agc ctg gcc 241

Ser Gln Asn Ile Phe Phe Ser Pro Val Ser Ile Ser Met Ser Leu Ala
 65 70 75

atg ctc tcc ctg ggg gct ggg tcc agc aca aag atg cag atc ctg gag 289
 Met Leu Ser Leu Gly Ala Gly Ser Ser Thr Lys Met Gln Ile Leu Glu
 80 85 90

ggc ctg ggc ctc aac ctc cag aaa agc tca gag gag gag ctg cac aga 337
 Gly Leu Gly Leu Asn Leu Gln Lys Ser Ser Glu Glu Glu Leu His Arg
 95 100 105

ggc ttt cag cag ctc ctt cag gaa ctc aac cag ccc aga gat ggc ttc 385
 Gly Phe Gln Gln Leu Leu Gln Glu Leu Asn Gln Pro Arg Asp Gly Phe
 110 115 120 125

cag ctg agc ctc ggc aat gcc ctt ttc acc gac ctg gtg gta gac ctg 433
 Gln Leu Ser Leu Gly Asn Ala Leu Phe Thr Asp Leu Val Val Asp Leu
 130 135 140

cag gac acc ttc gta agt gcc atg aag acg ctg tac ctg gca gac act 481
 Gln Asp Thr Phe Val Ser Ala Met Lys Thr Leu Tyr Leu Ala Asp Thr
 145 150 155

ttc ccc acc aac ttt agg gac tct gca ggg gcc atg aag cag atc aat 529
 Phe Pro Thr Asn Phe Arg Asp Ser Ala Gly Ala Met Lys Gln Ile Asn
 160 165 170

gat tat gtg gca aag caa acg aag ggc aag att gtg gac ttg ctt aag 577
 Asp Tyr Val Ala Lys Gln Thr Lys Gly Lys Ile Val Asp Leu Leu Lys
 175 180 185

aac ctc gat agc aat gcg gtc gtg atc atg gtg aat tac atc ttc ttt 625
 Asn Leu Asp Ser Asn Ala Val Val Ile Met Val Asn Tyr Ile Phe Phe
 190 195 200 205

aaa gct aag tgg gag aca agc ttc aac cac aaa ggc acc caa gag caa 673

Lys	Ala	Lys	Trp	Glu	Thr	Ser	Phe	Asn	His	Lys	Gly	Thr	Gln	Glu	Gln	
210															220	
gac ttc tac gtg acc tcg gag act gtg gtg cgg gta ccc atg atg agc															721	
Asp	Phe	Tyr	Val	Thr	Ser	Glu	Thr	Val	Val	Arg	Val	Pro	Met	Met	Ser	
225															235	
cgc gag gat cag tat cac tac ctc ctg gac cgg aac ctc tcc tgc agg															769	
Arg	Glu	Asp	Gln	Tyr	His	Tyr	Leu	Leu	Asp	Arg	Asn	Leu	Ser	Cys	Arg	
240															250	
gtg gtg ggg gtc ccc tac caa ggc aat gcc acg gct ttg ttc att ctc															817	
Val	Val	Gly	Val	Pro	Tyr	Gln	Gly	Asn	Ala	Thr	Ala	Leu	Phe	Ile	Leu	
255															265	
ccc agt gag gga aag atg cag cag gtg gag aat gga ctg agt gag aaa															865	
Pro	Ser	Glu	Gly	Lys	Met	Gln	Gln	Val	Glu	Asn	Gly	Leu	Ser	Glu	Lys	
270															285	
acg ctg agg aag tgg ctt aag atg ttc aaa aag agg cag ctc gag ctt															913	
Thr	Leu	Arg	Lys	Trp	Leu	Lys	Met	Phe	Lys	Lys	Arg	Gln	Leu	Glu	Leu	
290															300	
tac ctt ccc aaa ttc tcc att gag ggc tcc tat cag ctg gag aaa gtc															961	
Tyr	Leu	Pro	Lys	Phe	Ser	Ile	Glu	Gly	Ser	Tyr	Gln	Leu	Glu	Lys	Val	
305															315	
ctc ccc agt ctg ggg atc agt aac gtc ttc acc tcc cat gct gat ctg															1009	
Leu	Pro	Ser	Leu	Gly	Ile	Ser	Asn	Val	Phe	Thr	Ser	His	Ala	Asp	Leu	
320															330	
tcc ggc atc agc aac cac tca aat atc cag gtg tct gag atg gtg cac															1057	
Ser	Gly	Ile	Ser	Asn	His	Ser	Asn	Ile	Gln	Val	Ser	Glu	Met	Val	His	
335															345	
aaa gct gtg gtg gag gtg gac gag tcg gga acc aga gca gcg gca gcc															1105	

Lys Ala Val Val Glu Val Asp Glu Ser Gly Thr Arg Ala Ala Ala
 350 355 360 365

acg ggg aca ata ttc act ttc agg tcg gcc cgc ctg aac tct cag agg 1153
 Thr Gly Thr Ile Phe Thr Phe Arg Ser Ala Arg Leu Asn Ser Gln Arg
 370 375 380

cta gtg ttc aac agg ccc ttt ctg atg ttc att gtg gat aac aac atc 1201
 Leu Val Phe Asn Arg Pro Phe Leu Met Phe Ile Val Asp Asn Asn Ile
 385 390 395

ctc ttc ctt ggc aaa gtg aac cgc ccc gga tcc gac tac aag gac gac 1249
 Leu Phe Leu Gly Lys Val Asn Arg Pro Gly Ser Asp Tyr Lys Asp Asp
 400 405 410

gat gac aag tga 1261
 Asp Asp Lys
 415

<210> 7

<211> 416

<212> PRT

<213> Artificial

<220>

<223> Human PCI with Flag-tag

<220>

<221> sig_peptide

<222> (1)..(19)

<400> 7

Met Gln Leu Phe Leu Leu Leu Cys Leu Val Leu Leu Ser Pro Gln Gly

Ala Ser Leu His Arg His His Pro Arg Glu Met Lys Lys Arg Val Glu
 20 25 30

Asp Leu His Val Gly Ala Thr Val Ala Pro Ser Ser Arg Arg Asp Phe
 35 40 45

Thr Phe Asp Leu Tyr Arg Val Leu Ala Ser Ala Ala Pro Ser Gln Asn
 50 55 60

Ile Phe Phe Ser Pro Val Ser Ile Ser Met Ser Leu Ala Met Leu Ser
 65 70 75 80

Leu Gly Ala Gly Ser Ser Thr Lys Met Gln Ile Leu Glu Gly Leu Gly
 85 90 95

Leu Asn Leu Gln Lys Ser Ser Glu Glu Glu Leu His Arg Gly Phe Gln
 100 105 110

Gln Leu Leu Gln Glu Leu Asn Gln Pro Arg Asp Gly Phe Gln Leu Ser
 115 120 125

Leu Gly Asn Ala Leu Phe Thr Asp Leu Val Val Asp Leu Gln Asp Thr
 130 135 140

Phe Val Ser Ala Met Lys Thr Leu Tyr Leu Ala Asp Thr Phe Pro Thr
 145 150 155 160

Asn Phe Arg Asp Ser Ala Gly Ala Met Lys Gln Ile Asn Asp Tyr Val
 165 170 175

Ala Lys Gln Thr Lys Gly Lys Ile Val Asp Leu Leu Lys Asn Leu Asp
 180 185 190

Ser Asn Ala Val Val Ile Met Val Asn Tyr Ile Phe Phe Lys Ala Lys
 195 200 205

Trp Glu Thr Ser Phe Asn His Lys Gly Thr Gln Glu Gln Asp Phe Tyr
210 215 220

Val Thr Ser Glu Thr Val Val Arg Val Pro Met Met Ser Arg Glu Asp
225 230 235 240

Gln Tyr His Tyr Leu Leu Asp Arg Asn Leu Ser Cys Arg Val Val Gly
245 250 255

Val Pro Tyr Gln Gly Asn Ala Thr Ala Leu Phe Ile Leu Pro Ser Glu
260 265 270

Gly Lys Met Gln Gln Val Glu Asn Gly Leu Ser Glu Lys Thr Leu Arg
275 280 285

Lys Trp Leu Lys Met Phe Lys Lys Arg Gln Leu Glu Leu Tyr Leu Pro
290 295 300

Lys Phe Ser Ile Glu Gly Ser Tyr Gln Leu Glu Lys Val Leu Pro Ser
305 310 315 320

Leu Gly Ile Ser Asn Val Phe Thr Ser His Ala Asp Leu Ser Gly Ile
325 330 335

Ser Asn His Ser Asn Ile Gln Val Ser Glu Met Val His Lys Ala Val
340 345 350

Val Glu Val Asp Glu Ser Gly Thr Arg Ala Ala Ala Ala Thr Gly Thr
355 360 365

Ile Phe Thr Phe Arg Ser Ala Arg Leu Asn Ser Gln Arg Leu Val Phe
370 375 380

Asn Arg Pro Phe Leu Met Phe Ile Val Asp Asn Asn Ile Leu Phe Leu
385 390 395 400

Gly Lys Val Asn Arg Pro Gly Ser Asp Tyr Lys Asp Asp Asp Asp Lys
 405 410 415

<210> 8

<211> 119

<212> PRT

<213> *Mus musculus*

<400> 8

Glu Val Gln Leu Gln Gln Ser Gly Ala Glu Leu Val Lys Pro Gly Ala
 1 5 10 15

Ser Val Lys Leu Ser Cys Thr Ala Ser Gly Phe Asp Ile Lys Asp Thr
 20 25 30

Phe Met His Trp Val Lys Gln Arg Pro Glu Gln Gly Leu Glu Trp Ile
 35 40 45

Gly Arg Ile Asp Tyr Val Asn Gly Asn Thr Lys Tyr Asp Pro Lys Phe
 50 55 60

Gln Gly Lys Ala Thr Ile Thr Gly Asp Thr Ser Ser Asn Thr Ala Tyr
 65 70 75 80

Leu Gln Leu Ser Ser Leu Thr Ser Glu Asp Thr Ala Val Tyr Tyr Cys
 85 90 95

Ala Arg Gly Gly Tyr Asp Val Arg Glu Phe Ala Tyr Trp Gly Gln Gly
 100 105 110

Thr Leu Val Thr Val Ser Ala
 115

<210> 9

<211> 119

<212> PRT

<213> Mus musculus

<400> 9

Glu Val Gln Leu Gln Gln Ser Gly Ala Glu Leu Val Lys Pro Gly Ala

1

5

10

15

Ser Val Lys Leu Ser Cys Thr Ala Ser Gly Phe Asp Ile Lys Asp Thr

20

25

30

Phe Met His Trp Val Lys Gln Arg Pro Glu Gln Gly Leu Glu Trp Ile

35

40

45

Gly Arg Ile Asp Tyr Val Asn Gly Asn Thr Lys Tyr Asp Pro Lys Phe

50

55

60

Gln Gly Lys Ala Thr Ile Thr Gly Asp Thr Ser Ser Asn Thr Ala Tyr

65

70

75

80

Leu Gln Leu Ser Ser Leu Thr Ser Glu Asp Thr Ala Val Tyr Tyr Cys

85

90

95

Ala Arg Gly Gly Tyr Asp Val Arg Glu Phe Ala Tyr Trp Gly Gln Gly

100

105

110

Thr Leu Val Thr Val Ser Ala

115

<210> 10

<211> 119

<212> PRT

<213> Mus musculus

<400> 10

Glu Val Gln Leu Gln Gln Ser Gly Ala Glu Leu Val Lys Pro Gly Ala
 1 5 10 15

Ser Val Lys Leu Ser Cys Thr Ala Ser Gly Phe Asp Ile Arg Asp Thr
 20 25 30

Phe Met His Trp Val Lys Gln Arg Pro Glu Gln Gly Leu Glu Trp Ile
 35 40 45

Gly Arg Ile Asp Leu Val Asn Val Asn Thr Lys Tyr Asp Pro Asn Phe
 50 55 60

Gln Asp Arg Ala Thr Ile Thr Ala Asp Thr Ser Ser Asn Thr Ala Tyr
 65 70 75 80

Leu Gln Leu Thr Ser Leu Thr Ser Glu Asp Thr Ala Val Tyr Tyr Cys
 85 90 95

Ala Arg Gly Gly Tyr Asp Val Arg Glu Phe Ala Tyr Trp Gly Gln Gly
 100 105 110

Thr Leu Val Thr Val Ser Ala
 115

<210> 11
 <211> 119
 <212> PRT
 <213> Mus musculus

<400> 11
 Glu Val Gln Leu Gln Gln Ser Gly Ala Glu Leu Val Arg Pro Gly Ala
 1 5 10 15

Leu Val Lys Leu Ser Cys Lys Ala Ser Gly Phe Asn Ile Lys Asp Tyr
 20 25 30

Tyr Ile His Trp Val Lys Gln Arg Pro Glu Gln Gly Leu Glu Trp Ile
 35 40 45

Gly Arg Ile Asp Leu Glu Lys Gly Asn Ile Ile Tyr Asp Pro Lys Phe
 50 55 60

Gln Gly Lys Asp Asn Ile Thr Ala Asp Thr Ser Ser Asn Thr Ala Tyr
 65 70 75 80

Leu Gln Leu Ser Ser Leu Thr Ser Glu Asp Thr Ala Val Tyr Tyr Cys
 85 90 95

Ala Arg Gly Gly Tyr Asp Val Pro Ser Phe Ala Tyr Trp Gly Gln Gly
 100 105 110

Thr Leu Val Thr Val Ser Ala
 115

<210> 12

<211> 119

<212> PRT

<213> Mus musculus

<400> 12

Glu Val Lys Leu Leu Glu Ser Gly Gly Gly Leu Val Gln Pro Gly Gly
 1 5 10 15

Ser Leu Lys Leu Ser Cys Ala Ala Ser Gly Phe Asp Phe Ser Arg Tyr
 20 25 30

Trp Met Ser Trp Val Arg Gln Ala Pro Gly Lys Gly Leu Glu Trp Ile
 35 40 45

Gly Glu Ile Asn Pro Asp Ser Ser Thr Ile Asn Tyr Thr Pro Ser Leu

50

55

60

Lys Asp Lys Phe Ile Ile Ser Arg Asp Asn Ala Lys Lys Thr Leu Tyr
 65 70 75 80

Leu Gln Met Asn Lys Val Arg Ser Glu Asp Thr Ala Leu Tyr Tyr Cys
 85 90 95

Ala Arg Phe Phe Tyr Tyr Gly Thr Pro Asp Tyr Trp Gly Gln Gly Thr
 100 105 110

Thr Leu Thr Val Ser Ser Ala
 115

<210> 13

<211> 119

<212> PRT

<213> Mus musculus

<400> 13

Glu Val Lys Leu Leu Glu Ser Gly Gly Gly Leu Val Gln Pro Gly Gly
 1 5 10 15

Ser Leu Lys Phe Ser Cys Glu Ala Ser Gly Phe Asp Phe Ser Arg Tyr
 20 25 30

Trp Met Ser Trp Val Arg Gln Ala Pro Gly Lys Gly Leu Glu Trp Ile
 35 40 45

Gly Glu Ile Asn Pro Asp Ser Ser Thr Ile Thr Tyr Thr Ser Ser Leu
 50 55 60

Lys Asp Arg Phe Ile Ile Ser Arg Asp Asn Ala Lys Asn Thr Val Tyr
 65 70 75 80

Leu Gln Met Ser Lys Val Arg Ser Glu Asp Thr Ala Leu Tyr Tyr Cys
 85 90 95

Ala Arg Leu Phe Tyr Tyr Gly Thr Pro Asp Tyr Trp Gly Gln Gly Thr
 100 105 110

Thr Leu Thr Val Ser Ser Ala
 115

<210> 14
 <211> 120
 <212> PRT
 <213> Mus musculus

<400> 14
 Gln Val Gln Leu Gln Gln Ser Gly Ala Glu Leu Val Lys Pro Gly Ala
 1 5 10 15

Ser Val Lys Met Ser Cys Lys Ala Phe Gly Tyr Thr Phe Thr Thr Tyr
 20 25 30

Pro Ile Glu Trp Met Lys Gln Asn His Gly Lys Ser Leu Glu Trp Ile
 35 40 45

Gly Lys Phe His Pro Asp Asn Asp Asp Thr Asn Tyr Asn Glu Lys Phe
 50 55 60

Lys Gly Lys Ala Lys Leu Thr Val Glu Lys Ser Ser Ser Thr Val Tyr
 65 70 75 80

Leu Glu Leu Ser Arg Leu Thr Ser Asp Asp Ser Ala Val Tyr Tyr Cys
 85 90 95

Ala Arg Gly His Asp Tyr Asp Tyr Gly Met Asp Tyr Trp Gly Gln Gly
 100 105 110

Thr Ser Val Thr Val Ser Ser Ala
 115 120

<210> 15
 <211> 106
 <212> PRT
 <213> *Mus musculus*

<400> 15
 Gln Ile Val Leu Thr Gln Ser Pro Ala Ile Met Ser Ala Ser Pro Gly
 1 5 10 15

Glu Lys Val Thr Ile Thr Cys Ser Ala Thr Ser Ser Leu Ile Tyr Met
 20 25 30

His Trp Phe Gln Gln Lys Pro Gly Ser Ser Pro Glu Leu Trp Ile Tyr
 35 40 45

Ser Thr Ser Asn Leu Ala Ser Gly Val Pro Ala Arg Phe Ser Gly Ser
 50 55 60

Gly Ser Gly Thr Ser Tyr Ser Leu Thr Ile Ser Arg Met Glu Ala Glu
 65 70 75 80

Asp Ala Ala Thr Tyr Tyr Cys Gln Gln Arg Ser Ser Tyr Pro Phe Thr
 85 90 95

Phe Gly Ser Gly Thr Lys Leu Glu Ile Lys
 100 105

<210> 16
 <211> 106
 <212> PRT

21/40

<213> Mus musculus

<400> 16

Gln Ile Val Leu Thr Gln Ser Pro Ala Ile Met Ser Ala Ser Pro Gly
1 5 10 15

Glu Lys Val Thr Ile Thr Cys Ser Ala Thr Ser Ser Leu Ile Tyr Met
20 25 30

His Trp Phe Gln Gln Lys Pro Gly Ser Ser Pro Glu Leu Trp Ile Tyr
35 40 45

Ser Thr Ser Asn Leu Ala Ser Gly Val Pro Ala Arg Phe Ser Gly Ser
50 55 60

Gly Ser Gly Thr Ser Tyr Ser Leu Thr Ile Ser Arg Met Glu Ala Glu
65 70 75 80

Asp Ala Ala Thr Tyr Tyr Cys Gln Gln Arg Ser Ser Tyr Pro Phe Thr
85 90 95

Phe Gly Ser Gly Thr Lys Leu Glu Ile Lys
100 105

<210> 17

<211> 106

<212> PRT

<213> Mus musculus

<400> 17

Gln Ile Val Leu Thr Gln Ser Pro Ala Ile Met Ser Ala Ser Pro Gly
1 5 10 15

Glu Lys Val Thr Ile Thr Cys Ser Ala Thr Ser Ser Leu Ile Tyr Met
20 25 30

His Trp Phe Gln Gln Lys Pro Gly Thr Ser Pro Lys Leu Trp Ile Tyr
 35 40 45

Ser Thr Ser Asn Leu Ala Ser Gly Val Pro Ala Arg Phe Ser Gly Ser
 50 55 60

Gly Ser Gly Thr Ser Tyr Ser Leu Thr Ile Ser Arg Met Glu Ala Glu
 65 70 75 80

Asp Ala Ala Thr Tyr Tyr Cys Gln Gln Arg Ser Ser Tyr Pro Phe Thr
 85 90 95

Phe Gly Ser Gly Thr Lys Leu Glu Ile Lys
 100 105

<210> 18

<211> 106

<212> PRT

<213> *Mus musculus*

<400> 18

Gln Ile Val Leu Thr Gln Ser Pro Ala Ile Met Ser Ala Ser Pro Gly
 1 5 10 15

Glu Lys Val Thr Ile Thr Cys Ser Ala Ser Ser Ser Val Ser Tyr Met
 20 25 30

His Trp Phe Gln Gln Lys Pro Gly Thr Ser Pro Lys Leu Trp Ile Tyr
 35 40 45

Ser Thr Ser Asn Leu Ala Ser Gly Val Pro Ala Arg Phe Ser Gly Ser
 50 55 60

Gly Ser Gly Thr Ser Tyr Ser Leu Thr Ile Ser Arg Met Glu Ala Glu

65

70

75

80

Asp Ala Ala Thr Tyr Tyr Cys Gln Gln Arg Ser Ser Tyr Pro Phe Thr
 85 90 95

Phe Gly Ser Gly Thr Lys Leu Glu Ile Lys
 100 105

<210> 19

<211> 108

<212> PRT

<213> Mus musculus

<400> 19

Asp Ile Val Met Thr Gln Ser His Lys Phe Met Ser Ala Ser Val Gly
 1 5 10 15

Asp Arg Val Ser Ile Thr Cys Lys Ala Ser Gln Asp Val Ile Val Ala
 20 25 30

Val Ala Trp Tyr Gln Gln Lys Pro Gly Gln Ser Pro Glu Leu Leu Ile
 35 40 45

Tyr Ser Ala Ser Tyr Arg Tyr Thr Gly Val Pro Asp Arg Phe Thr Gly
 50 55 60

Ser Gly Ser Gly Thr Asp Phe Thr Phe Thr Ile Ser Ser Val Gln Ala
 65 70 75 80

Glu Asp Leu Ala Val Tyr Tyr Cys Gln Gln His Tyr Ser Ser Pro Pro
 85 90 95

Trp Thr Phe Gly Gly Thr Lys Leu Glu Ile Lys
 100 105

<210> 20

<211> 108

<212> PRT

<213> *Mus musculus*

<400> 20

Asp Ile Val Met Thr Gln Ser His Lys Phe Met Ser Thr Ser Val Gly
 1 5 10 15

Asp Arg Val Ser Ile Thr Cys Lys Ala Ser Gln Asp Val Ile Lys Ala
 20 25 30

Val Ala Trp Tyr Gln Gln Lys Pro Gly Gln Ser Pro Lys Leu Leu Ile
 35 40 45

Tyr Ser Thr Ser Tyr Arg Tyr Thr Gly Val Pro Asp Arg Phe Ser Gly
 50 55 60

Ser Gly Ser Gly Thr Asp Phe Thr Phe Thr Ile Ser Ser Val Gln Ala
 65 70 75 80

Glu Asp Leu Ala Val Tyr Tyr Cys Gln Gln His Tyr Ser Ser Pro Pro
 85 90 95

Trp Thr Phe Gly Gly Thr Lys Leu Glu Ile Lys
 100 105

<210> 21

<211> 111

<212> PRT

<213> *Mus musculus*

<400> 21

Asp Ile Val Leu Thr Gln Ser Pro Ala Ser Leu Ala Val Ser Leu Gly

1

5

10

15

Gln Arg Ala Thr Ile Ser Cys Lys Ala Ser Gln Ser Val Asp Tyr Asp
 20 25 30

Gly Asp Ser Tyr Leu Asn Trp Tyr Gln Gln Lys Pro Gly Gln Pro Pro
 35 40 45

Lys Leu Leu Ile Tyr Gly Ala Ser Asn Leu Glu Ser Gly Thr Pro Ala
 50 55 60

Arg Phe Ser Gly Ser Gly Ser Gly Thr Asp Phe Thr Leu Asp Ile His
 65 70 75 80

Pro Val Glu Glu Glu Asp Ala Ala Thr Tyr Tyr Cys Gln Gln Ser Asn
 85 90 95

Glu Asp Pro Pro Thr Phe Gly Gly Thr Lys Leu Glu Ile Thr
 100 105 110

<210> 22

<211> 5

<212> PRT

<213> Mus musculus

<400> 22

Asp Thr Phe Met His

1

5

<210> 23

<211> 5

<212> PRT

<213> Mus musculus

<400> 23

Asp Tyr Tyr Ile His

1 5

<210> 24

<211> 5

<212> PRT

<213> Mus musculus

<400> 24

Arg Tyr Trp Met Ser

1 5

<210> 25

<211> 5

<212> PRT

<213> Mus musculus

<400> 25

Thr Tyr Pro Ile Glu

1 5

<210> 26

<211> 17

<212> PRT

<213> Mus musculus

<400> 26

Arg Ile Asp Tyr Val Asn Gly Asn Thr Lys Tyr Asp Pro Lys Phe Gln

1 5 10 15

Gly

<210> 27

<211> 17

<212> PRT

<213> *Mus musculus*

<400> 27

Arg Ile Asp Leu Val Asn Val Asn Thr Lys Tyr Asp Pro Asn Phe Gln

1

5

10

15

Asp

<210> 28

<211> 17

<212> PRT

<213> *Mus musculus*

<400> 28

Arg Ile Asp Leu Glu Lys Gly Asn Ile Ile Tyr Asp Pro Lys Phe Gln

1

5

10

15

Gly

<210> 29

<211> 17

<212> PRT

<213> *Mus musculus*

<400> 29

Glu Ile Asn Pro Asp Ser Ser Thr Ile Asn Tyr Thr Pro Ser Leu Lys

1

5

10

15

Asp

<210> 30

<211> 17

<212> PRT

<213> *Mus musculus*

<400> 30

Glu Ile Asn Pro Asp Ser Ser Thr Ile Thr Tyr Thr Ser Ser Leu Lys

1

5

10

15

Asp

<210> 31

<211> 17

<212> PRT

<213> *Mus musculus*

<400> 31

Lys Phe His Pro Asp Asn Asp Asp Thr Asn Tyr Asn Glu Lys Phe Lys

1

5

10

15

Gly

<210> 32

<211> 10

<212> PRT

<213> *Mus musculus*

<400> 32

Gly Gly Tyr Asp Val Arg Glu Phe Ala Tyr
1 5 10

<210> 33

<211> 10
<212> PRT
<213> *Mus musculus*

<400> 33

Gly Gly Tyr Asp Val Pro Ser Phe Ala Tyr
1 5 10

<210> 34

<211> 9
<212> PRT
<213> *Mus musculus*

<400> 34

Phe Phe Tyr Tyr Gly Thr Pro Asp Tyr
1 5

<210> 35

<211> 9
<212> PRT
<213> *Mus musculus*

<400> 35

Leu Phe Tyr Tyr Gly Thr Pro Asp Tyr
1 5

<210> 36

<211> 10

<212> PRT

<213> *Mus musculus*

<400> 36

Gly His Asp Tyr Asp Tyr Gly Met Asp Tyr

1 5 10

<210> 37

<211> 10

<212> PRT

<213> *Mus musculus*

<400> 37

Ser Ala Thr Ser Ser Leu Ile Tyr Met His

1 5 10

<210> 38

<211> 10

<212> PRT

<213> *Mus musculus*

<400> 38

Ser Ala Ser Ser Ser Val Ser Tyr Met His

1 5 10

<210> 39

<211> 11

<212> PRT

<213> *Mus musculus*

<400> 39

Lys Ala Ser Gln Asp Val Ile Val Ala Val Ala

1 5 10

<210> 40

<211> 11

<212> PRT

<213> *Mus musculus*

<400> 40

Lys Ala Ser Gln Asp Val Ile Lys Ala Val Ala

1 5 10

<210> 41

<211> 15

<212> PRT

<213> *Mus musculus*

<400> 41

Lys Ala Ser Gln Ser Val Asp Tyr Asp Gly Asp Ser Tyr Leu Asn

1 5 10 15

<210> 42

<211> 11

<212> PRT

<213> *Mus musculus*

<400> 42

Ser Thr Ser Asn Leu Ala Ser Gly Val Pro Ala

1 5 10

<210> 43

<211> 11

<212> PRT

<213> Mus musculus

<400> 43

Ser Ala Ser Tyr Arg Tyr Thr Gly Val Pro Asp

1 5 10

<210> 44

<211> 11

<212> PRT

<213> Mus musculus

<400> 44

Ser Thr Ser Tyr Arg Tyr Thr Gly Val Pro Asp

1 5 10

<210> 45

<211> 11

<212> PRT

<213> Mus musculus

<400> 45

Gly Ala Ser Asn Leu Glu Ser Gly Thr Pro Ala

1 5 10

<210> 46

<211> 7

<212> PRT

<213> Mus musculus

<400> 46

Arg Ser Ser Tyr Pro Phe Thr

1 5

<210> 47

<211> 8

<212> PRT

<213> *Mus musculus*

<400> 47

His Tyr Ser Ser Pro Pro Trp Thr

1

5

<210> 48

<211> 7

<212> PRT

<213> *Mus musculus*

<400> 48

Ser Asn Glu Asp Pro Pro Thr

1

5

<210> 49

<211> 5

<212> PRT

<213> Artificial

<220>

<223> Heavy chain CDR1

<220>

<221> misc_feature

<222> (2)..(2)

<223> "Xaa" in position 2 represents "Thr" or "Tyr"

<220>

<221> misc_feature

<222> (3)..(3)

<223> "Xaa" in position 3 represents "Phe" or "Tyr"

<220>

<221> misc_feature

<222> (4)..(4)

<223> "Xaa" in position 4 represents "Met" or "Ile"

<400> 49

Asp Xaa Xaa Xaa His

1

5

<210> 50

<211> 17

<212> PRT

<213> Artificial

<220>

<223> Heavy chain CDR2

<220>

<221> misc_feature

<222> (4)..(4)

<223> "Xaa" in position 4 represents "Tyr" or "Leu"

<220>

<221> misc_feature

<222> (5)..(5)

<223> "Xaa" in position 5 represents "Val" or "Glu"

<220>

<221> misc_feature

<222> (6)..(6)

<223> "Xaa" in position 6 represents "Asn" or "Lys"

<220>
 <221> misc_feature
 <222> (7)..(7)
 <223> "Xaa" in position 7 represents "Gly" or "Val"

<220>
 <221> misc_feature
 <222> (9)..(9)
 <223> "Xaa" in position 9 represents "Thr" or "Ile"

<220>
 <221> misc_feature
 <222> (10)..(10)
 <223> "Xaa" in position 10 represents "Lys" or "Ile"

<220>
 <221> misc_feature
 <222> (14)..(14)
 <223> "Xaa" in position 14 represents "Lys" or "Asn"

<220>
 <221> misc_feature
 <222> (17)..(17)
 <223> "Xaa" in position 17 represents "Gly" or "Asp"

<400> 50
 Arg Ile Asp Xaa Xaa Xaa Xaa Asn Xaa Xaa Tyr Asp Pro Xaa Phe Gln
 1 5 10 15

Xaa

<210> 51
 <211> 10
 <212> PRT

<213> Artificial

<220>

<223> Heavy chain CDR3

<220>

<221> misc_feature

<222> (6)..(6)

<223> "Xaa" in position 6 represents "Arg" or "Pro"

<220>

<221> misc_feature

<222> (7)..(7)

<223> "Xaa" in position 7 represents "Glu" or "Ser"

<400> 51

Gly Gly Tyr Asp Val Xaa Xaa Phe Ala Tyr

1

5

10

<210> 52

<211> 5

<212> PRT

<213> Artificial

<220>

<223> Heavy chain CDR1

<400> 52

Arg Tyr Trp Met Ser

1

5

<210> 53

<211> 17

<212> PRT

<213> Artificial

<220>

<223> Heavy chain CDR2

<220>

<221> misc_feature

<222> (10)..(10)

<223> "Xaa" in position 10 represents "Asn" or "Thr"

<220>

<221> misc_feature

<222> (13)..(13)

<223> "Xaa" in position 13 represents "Pro" or "Ser"

<400> 53

Glu Ile Asn Pro Asp Ser Ser Thr Ile Xaa Tyr Thr Xaa Ser Leu Lys

1

5

10

15

Asp

<210> 54

<211> 9

<212> PRT

<213> Artificial

<220>

<223> Heavy chain CDR3

<220>

<221> misc_feature

<222> (1)..(1)

<223> "Xaa" in position 1 represents "Phe" or "Leu"

<400> 54

Xaa Phe Tyr Tyr Gly Thr Pro Asp Tyr

1

5

<210> 55

<211> 10

<212> PRT

<213> Artificial

<220>

<223> Light chain CDR1

<220>

<221> misc_feature

<222> (3)..(3)

<223> "Xaa" in position 3 represents "Thr" or "Ser"

<220>

<221> misc_feature

<222> (6)..(6)

<223> "Xaa" in position 6 represents "Leu" or "Val"

<220>

<221> misc_feature

<222> (7)..(7)

<223> "Xaa" in position 7 represents "Ile" or "Ser"

<400> 55

Ser Ala Xaa Ser Ser Xaa Xaa Tyr Met His

1

5

10

<210> 56

<211> 11

<212> PRT

<213> Artificial

<220>

<223> Light chain CDR2

<400> 56

Ser Thr Ser Asn Leu Ala Ser Gly Val Pro Ala

1 5 10

<210> 57

<211> 7

<212> PRT

<213> Artificial

<220>

<223> Light chain CDR3

<400> 57

Arg Ser Ser Tyr Pro Phe Thr

1 5

<210> 58

<211> 11

<212> PRT

<213> Artificial

<220>

<223> Light chain CDR1

<220>

<221> misc_feature

<222> (8)..(8)

<223> "Xaa" in position 8 represents "Val" or "Lys"

<400> 58

Lys Ala Ser Gln Asp Val Ile Xaa Ala Val Ala

1

5

10

<210> 59

<211> 11

<212> PRT

<213> Artificial

<220>

<223> Light chain CDR2

<220>

<221> misc_feature

<222> (2)..(2)

<223> "Xaa" in position 2 represents "Ala" or "Thr"

<400> 59

Ser Xaa Ser Tyr Arg Tyr Thr Gly Val Pro Asp

1

5

10

<210> 60

<211> 8

<212> PRT

<213> Artificial

<220>

<223> Light chain CDR3

<400> 60

His Tyr Ser Ser Pro Pro Trp Thr

1

5